

Date: Friday, 7/4/2008 8:46:57 AM  
User: Kim Johnston

# Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: BRACKET ASSEMBLY
Job Number	: 40251		
Estimate Number	: 10291		
P.O. Number	:	Part Number	: D3183044
This Issue	: 7/4/2008 S.O. No. :	Drawing Number	: D3183 REV C1
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: 1 / Type : MACHINED PARTS	Drawing Revision	: C1
Previous Run	: 40158	Material	:
Written By	:	Due Date	: 7/30/2008 Qty: 6 Um: Each
Checked & Approved By	: <u>08 07 04</u>		
Comment	: Est Rev: Pick: A 04.02.18 New issue: KJ/DS Est Rev: B Changed Mat Size 08-06-26 JLM Verified By: EC		

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	M174B1500X02250	17-4 SS Bar 1.5"X2.250"
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Comment: Qty.: 0.4812 f(s)/Unit Total: 2.8873 f(s)  
Material: 17-4 SS Bar per AMS 5604/5643  
(M17-4-B1.500x02.250  
Identify for D3183-4  
Batch: M108309 DJP 08/07/11 (6)

2.0	BAND SAW	BAND SAW
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Comment: BAND SAW  
Cut blanks: (1.500" x 2.000") 5.500" long

DJP 08/07/11 (6)

3.0	HAAS1	HAAS CNC VERTICAL MACHINING #1
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Comment: HAAS CNC VERTICAL MACHINING #1

1-Machine D3183-4 as per Folio FA322 and Dwg D3183  
Identify as D3183-4

2-Deburr

3-Scribe batch number

DJP / SF 08/07/11 (6)

4.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE
-----	-----	----------------------------------------



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

DJP 08/07/11 (6)

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Friday, 7/4/2008 8:46:57 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BRACKET ASSEMBLY

Job Number: 40251

Part Number: D3183044

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC8

SECOND CHECK



Comment: SECOND CHECK

JL 08/07/23

6.0

D312121

Bolt :



Comment: Qty.: 2.0000 Each(s)/Unit Total : 12.0000 Each(s)

Pick:

Qty Part Number

Description Batch

2 D3121-21

Bolt

B39947

08/07/28

7.0

D3183045

Bearing Assembly



Comment: Qty.: 2.0000 Each(s)/Unit Total : 12.0000 Each(s)

Pick:

Qty Part Number

Description Batch

2 D3183-045 Bearing Ass

B340496

08/07/28

8.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1  
Assemble D3183-043 as per Dwg D3183.

08/07/28 (6)

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

08/07/28 (6)

10.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location:

08/07/28 (6)

11.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

08/07/29

Job Completion



MF 08-07-28

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	40251
<b>Description:</b> Bracket		<b>Part Number:</b>	D3183-4
<b>Inspection Dwg:</b> D3183	<b>Rev:</b> C1	<b>Page 1 of 1</b>	

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
R0.190	+/-0.030	.188	✓			
R0.063	+/-0.010	.063	✓			
0.188	+/-0.010	.185	✓			
0.070	+/-0.010	.073	✓			
0.100	+/-0.010	.102	✓			
Ø0.201 x 0.100	+/-0.010	.203 x .103	✓			
0.183	+/-0.010	.185	✓			
5.32	+/-0.030	5.220	✓			
5.036	+/-0.010	5.036	✓			
2.120	+/-0.010	2.122	✓			
1.290	+/-0.010	1.292	✓			
0.365	+/-0.010	.366	✓			
0.218	+/-0.010	.219	✓			
1.030	+/-0.010	1.030	✓			
1.90	+/-0.030	1.890	✓			
1.012	+/-0.010	1.012	✓			
Ø0.201 x 0.100	+/-0.010	.201 x .102	✓			
0.786	+/-0.010	.787	✓			
Ø0.392	+0.002/-0.000	.393	✓			
R0.19	+/-0.030	.190	✓			
3.954	+/-0.010	3.954	✓			
0.162	+/-0.010	.162	✓			
R0.19	+/-0.030	.187	✓			
R0.25	+/-0.030	.250	✓			
4.26	+/-0.030	4.26	✓			
2.800	+/-0.030	2.800	✓			
Calculated dimension						
0.162	+/-0.010	0.162	✓			
0.615	+/-0.010	.617	✓			
0.435	+/-0.010	.435	✓			
0.200	+/-0.010	.201	✓			
0.381	+/-0.010	.382	✓			
0.032	+/-0.010	.032	✓			

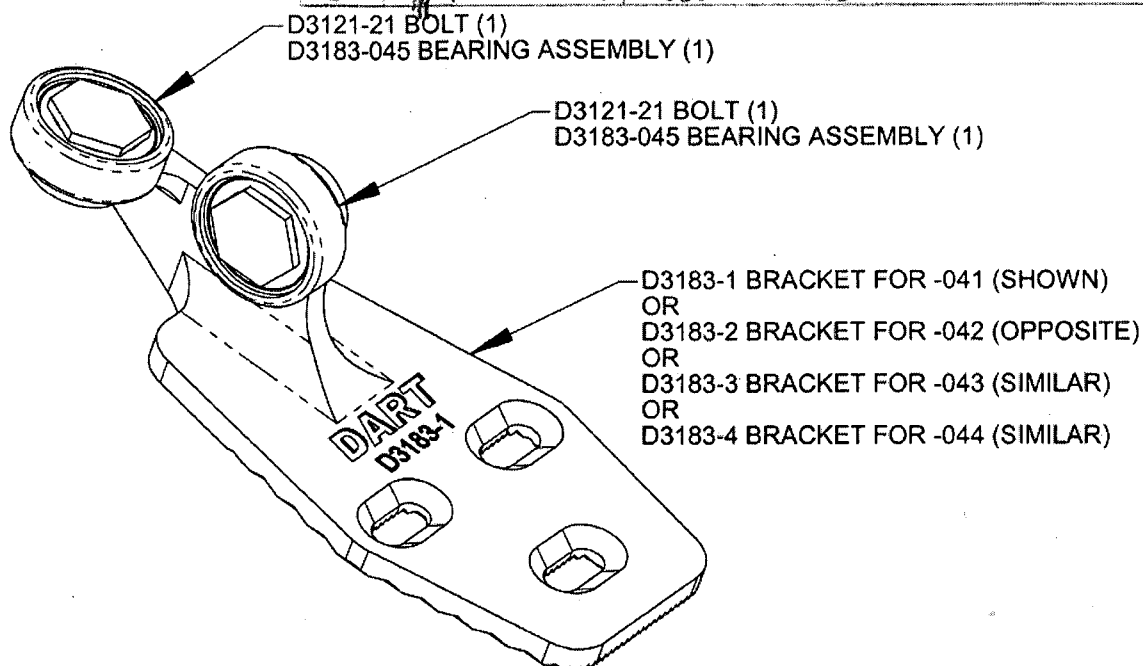
<b>Measured by:</b> S.P.	<b>Audited by:</b> J.L.	<b>Prototype Approval:</b>	N/A
<b>Date:</b> 08/07/18	<b>Date:</b> 08/07/18	<b>Date:</b>	N/A

Rev	Date	Change	Revised by	Approved
A	03.11.12	New Issue P/O D3183-044	KJ/RF	
B	04.03.15	Changes as per revision C	KJ/JLM/RF	
C	04.06.15	Dimension 2.800 was 2.080; removed 1.155, 0.36 dimensions	KJ/JLM	
D	06.03.09	Dwg Rev update	KJ/JLM	
E	08.01.16	Dimensions revised	KJ/EC/DD	

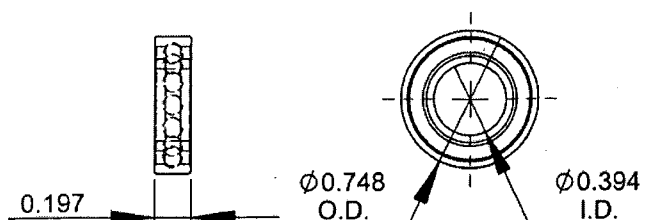


DESIGN #	DRAWN BY CP	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. <b>D3183</b>	REV. C SHEET 1 OF 4
DATE <b>04.02.17</b>		TITLE <b>BRACKET ASSEMBLY</b>	SCALE 1:1
A.	03.01.24	NEW ISSUE	
B	03.06.17	REMOVE BEARING; 1.012 WS 0.882	
C	04.02.17	ADD -045/-9; 0.182 WAS 0.431	
C1	# 04.11.09	0.830 WAS 0.850	

RELEASED  
04.03.01



**D3183-041 BRACKET ASSEMBLY (SHOWN)**  
**D3183-042 BRACKET ASSEMBLY (OPPOSITE)**  
**D3183-043 BRACKET ASSEMBLY (SIMILAR)**  
**D3183-044 BRACKET ASSEMBLY (SIMILAR)**



**D3183-5 BEARING:**  
**SPECIFICATION CONTROL DRAWING**

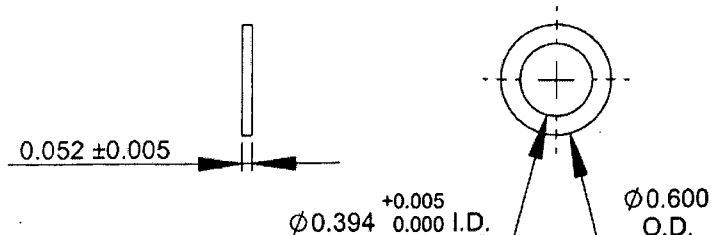
- 1) SINGLE ROW, DEEP GROOVE, CONRAD TYPE, SHIELDED
- 2) POSSIBLE SUPPLIER: NSK P/N 6800ZZ
- 3) ALL DIMENSIONS ARE IN INCHES

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**D3183-7 WASHER**

- 1) MATERIAL: AISI 303 ROUND BAR (M303R) ANNEALED
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES



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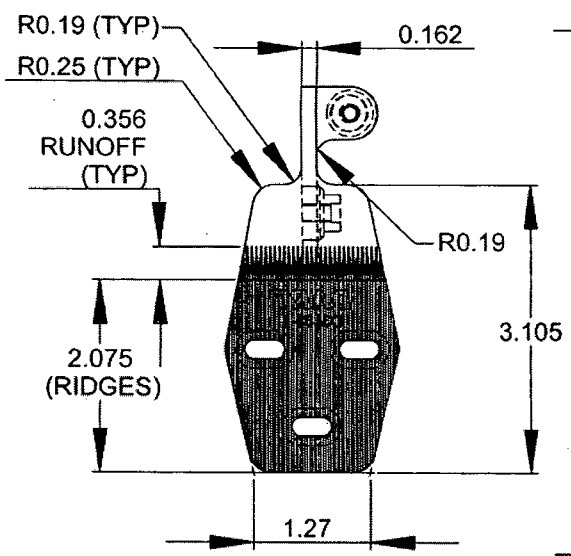
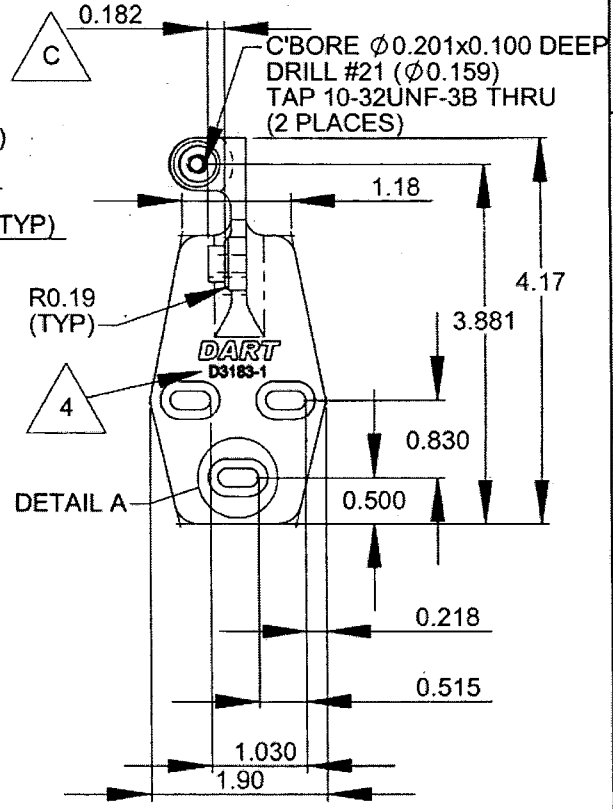
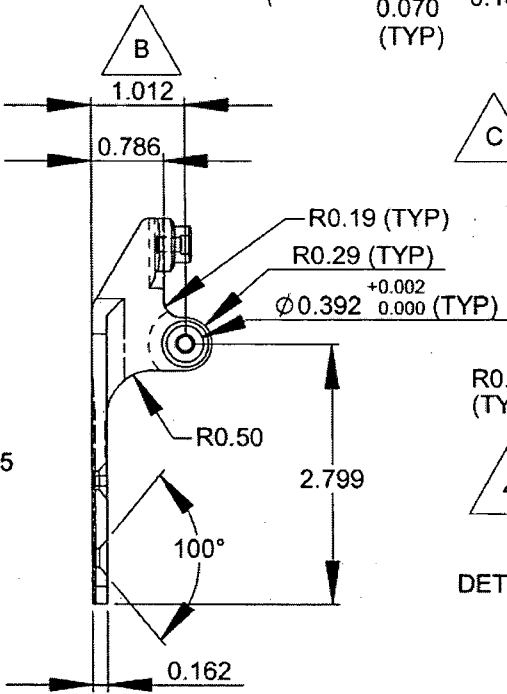
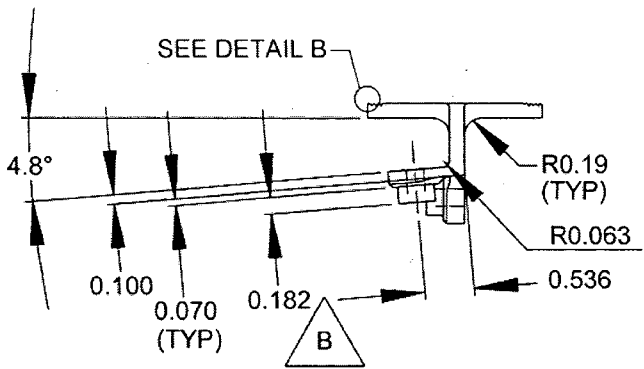
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04.02.17	D3183	SHEET 2 OF 4
TITLE	BRACKET ASSEMBLY	SCALE
		1:2

RELEASED  
04.03.01



**D3183-1 BRACKET SHOWN  
D3183-2 BRACKET OPPOSITE**

- 1) D3183-1 CAN BE MADE FROM D3183-3  
D3183-2 CAN BE MADE FROM D3183-4
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643  
(REF DART SPEC. M17-4-B)  
MIN ULTIMATE STRENGTH = 150 ksi  
MIN YIELD STRENGTH = 100 ksi
- 3) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 4) ENGRAVE DART P/N & LOGO AS SHOWN
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

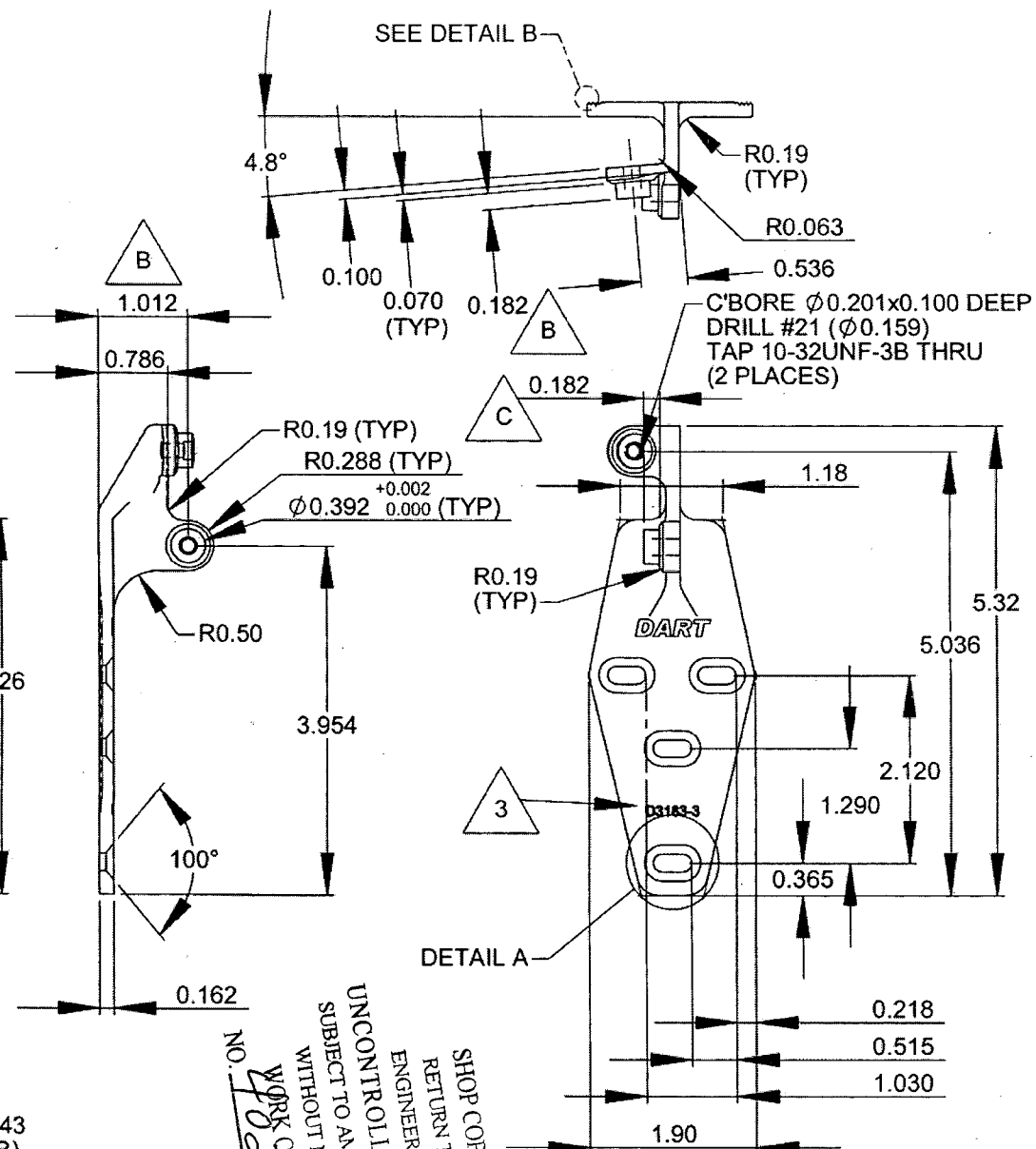
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04.02.17	D3183	SHEET 3 OF 4
	TITLE	SCALE
	BRACKET ASSEMBLY	1:2



D3183-3 BRACKET SHOWN  
(REPLACES BELL P/N 412-030-304-105)  
D3183-4 BRACKET OPPOSITE  
(REPLACES BELL P/N 412-030-304-106)

- 1) MATERIAL: 17-4 SS PER AMS 5604/5643  
(REF DART SPEC. M17-4-B)  
MIN ULTIMATE STRENGTH = 150 ksi  
MIN YIELD STRENGTH = 100 ksi
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 3) ENGRAVE DART P/N & LOGO AS SHOWN
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES

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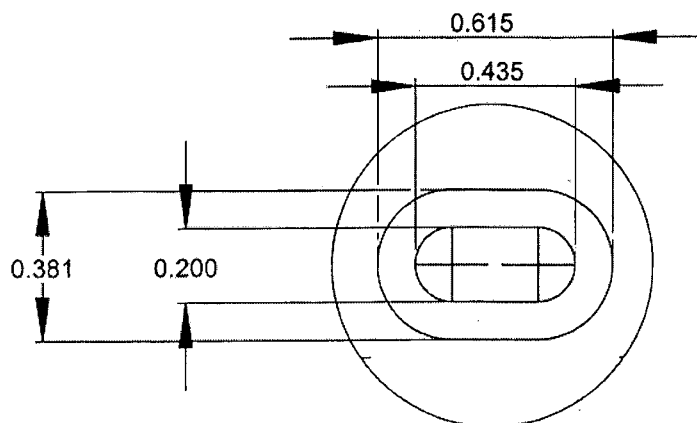
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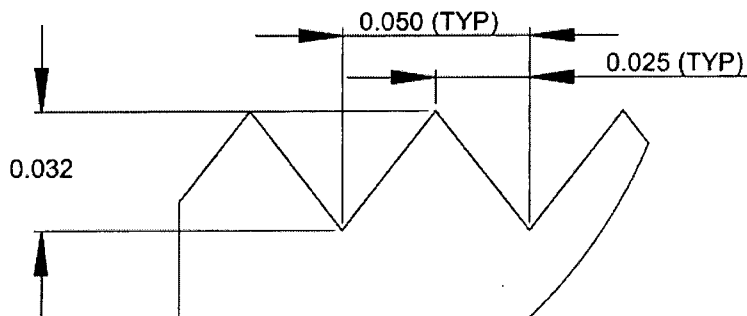


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DATE <b>04.02.17</b>		TITLE <b>BRACKET ASSEMBLY</b>	SCALE 1:1



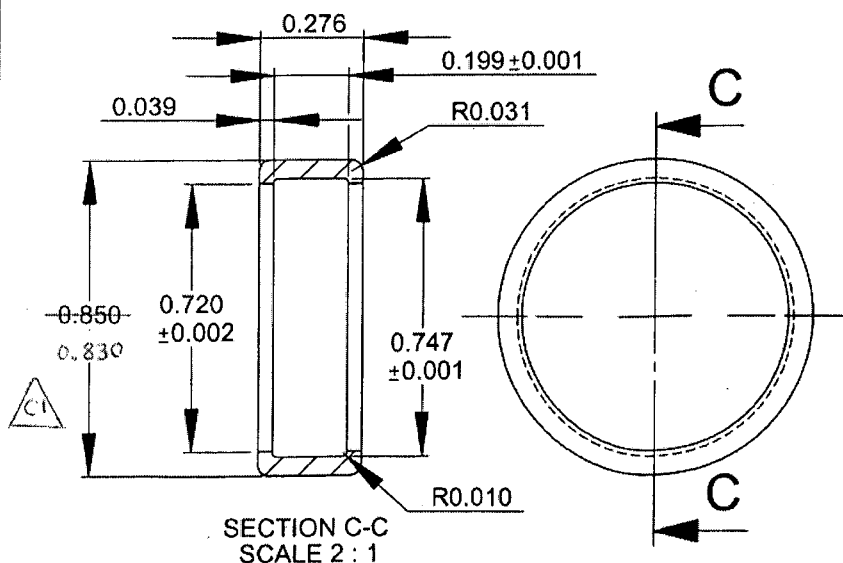
DETAIL A (2 : 1)

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DETAIL B (20 : 1)

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NO. **40257**



**D3183-9 CAP**

- 1) MATERIAL: DELRIN ROD, Ø1.00  
(REF DART SPEC. M-DELRIN-R1.00)
- 2) TOLERANCES ARE PER DART QSI 018  
UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES

**D3183-045 BEARING ASSEMBLY**

- 1) ASSEMBLE D3183-5 BEARING AND  
D3183-9 CAP

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